CLAIMS

1. A method for optimizing the positioning of high sensitivity receiver front-ends 5 in a mobile telephony network 1 of the CDMA type comprising a plurality of cells 2, said method being characterized in that it comprises the following steps:

- defining a first and a second cell indicator V_{cell}, V_2;
- defining a first and a second threshold value L and L_2;
- comparing said first cell indicator V_{cell} with a first threshold value L and said second cell indicator V_2 with a second threshold value L_2;
- associating with a first category a plurality of first cells 2a, each of said first cells 2a having said first cell indicator V_{cell} greater than said first threshold value L or said second cell indicator V_2 greater than said second threshold value L_2; and
- positioning a plurality of high sensitivity receiver front-ends 5 substantially in all said plurality of first cells 2a.

2. The method as claimed in claim 1, characterized in that it further comprises the steps of:

- associating with a second category a plurality of second cells 2b, each of said second cells 2b having said first cell indicator V_{cell} smaller than said first threshold value L and said second cell indicator V_2 smaller than said second threshold value L_2; and
- positioning a plurality of low sensitivity receiver front-ends substantially in all said plurality of second cells 2b.

3. The method as claimed in either of claims 1 or 2, characterized in that said step of defining for each cell 2 a first and a second cell indicator V_{cell}, V_2 comprises the steps of:

- associating with said first cell indicator V_{cell} cartographic/morphological characteristics indicative of a traffic expectation for each cell 2 and;
- associating with said second cell indicator V_2 cartographic/morphological characteristics indicative of a traffic expectation for each cell 2 and of an expanse of geographic area whereon each cell 2 stands.

4. The method as claimed in either of claims 2 or 3, characterized in that said step of defining a first and a second threshold value L and L_2 comprises the step of selecting a pair of values for said first and second threshold value L and L_2 in such a way that said plurality of first cells 2a is substantially equal in number to said plurality of high sensitivity receiver front-ends 5 and in that said plurality of second cells 2b is substantially equal to the difference between said plurality of cells 2 and said plurality of first cells 2a.

5. The method as claimed in claim 4, characterized in that said pair of values comprises a first and a second value, said first and second value meeting the

condition whereby the ratio between said first value and said second value is roughly equal to $1/15 \pm 0.005$.

6. A mobile telephony network 1 of the CDMA type comprising a plurality of cells 2, characterized in that said plurality of cells 2 comprises a plurality of first cells 2a associated to at least 90% of a plurality of high sensitivity receiver front-ends 5, each first cell 2a having a first cell indicator V_{cell} greater than a first threshold value L or a second cell indicator V_2 greater than a second threshold value.

7. The network as claimed in claim 6, characterized in that it comprises a plurality of second cells 2b associated with a plurality of low sensitivity receiver front-ends, each second cell 2b having said first cell indicator V_{cell} smaller than said first threshold value L and said second cell indicator V_2 smaller than said second threshold value L_2.

8. The network as claimed in either of the claims 6 or 7, characterized in that said first cell indicator V_{cell} is associated to cartographic/morphological characteristics indicative of a traffic expectation for each cell 2 and said second cell indicator V_2 is associated to cartographic/morphological characteristics indicative of a traffic expectation for each cell 2 and of an expanse of geographic area whereon each cell 2 stands.

9. The network as claimed in any of the previous claims, characterized in that each high sensitivity receiver front-end 5 is inserted between a transceiver antenna 4 and a base transceiver station 3, said high sensitivity receiver front-end 4 being a cryogenic receiver front-end.

10. The network as claimed in claim 9, characterized in that said cryogenic receiver front-end 5 comprises a cryostat 11 that encloses a band-pass filter 12 and a low noise amplifier 13 mutually connected in cascade arrangement.

11. The network as claimed in claim 10, characterized in that said band-pass filter 12 is obtained with a technology based on high critical temperature superconducting materials.

12. The network as claimed in any of claims 9-11, characterized in that said cryogenic receiver front-end 5 is mounted at such a distance from said transceiver antenna 4 that losses due to antenna lead-in are negligible with respect to the noise figure introduced by said cryogenic receiver front-end 5.

13. The network as claimed in any of claims 9-12, characterized in that said cryogenic receiver front-end 5 is mounted along the antenna lead-in in such a way as to minimize the overall noise figure of the receiver chain from said transceiver antenna 4 to said base transceiver station 3.

14. The network as claimed in any of claims 9-13, characterized in that said cryostat 11 operates at cryogenic temperatures lower than 200 K.

15. The network as claimed in any of the claims 9-15, characterized in that said cryostat 11 operates at cryogenic temperatures lower than 100 K.

16. The network as claimed in any of claims 9-15, characterized in that said cryostat 11 operates at cryogenic temperatures higher than 60 K.

17. The network as claimed in any of claims 1 through 8, characterized in that each high sensitivity receiver front-end 5 is inserted between a transceiver antenna 4 and a base transceiver station 3, said high sensitivity receiver front-end 5 comprising at least a first and a second band-pass filter 25, 26 between which is inserted a low noise amplifier 27.

18. The network as claimed in any of the previous claims, characterized in that said plurality of cells 2 is greater than a predetermined value.

19. The network as claimed in claim 18, characterized in that said predetermined value is greater than 100.

20. The network as claimed in either of claims 18 or 19, characterized in that said predetermined value is greater than 1000.

21. The network as claimed in any of claims 18 through 20, characterized in that said predetermined value is greater than 500.